

Appl. No. 09/823,105  
Amdt. Dated September 29, 2004  
Reply to final Office action of August 6, 2004

**Amendments to the Specification:**

Please replace paragraphs [0039], [0040], [0042], and [0071] with the following amended paragraphs respectively:

[0039] The JVMDI specification for field watches requires *an event hook function* to be called every time the *watched* field is accessed or modified. Field access events are generated when the field ~~filed~~ specified is about to be accessed. Field accesses from Java Language code or from JNI are watched. Field accessed by other means is not watched. Similarly, field ~~filed~~ modification events are generated when the specified field ~~filed~~ is about to be modified from Java Language code or from JNI. JVMDI also supports cancellation of field watches during program execution. For each event generated, the hook function is called with an argument describing the event type and additional information specific to the event.

[0040] The field access events need information about the thread that event occurred, the class whose method accessed the field, the method that accessed the field, the location of the access, the class of the field, the field ~~filed~~ itself, and the object of which the corresponding field is accessed. Similarly, for modification events, the same information is passed to the event hook function with addition to the signature of the field and the new value that is written to the field.

[0042] The basic support for field watch is to insert an instrumentation code to the method's code space. This instrumentation code passes necessary information to a run-time library function, which calls the event hook function. To prevent significant runtime overhead caused by un-activated field ~~filed~~ watches, the execution of the instrumentation code is guarded by modifying the method's address space or using Boolean flag for each Java class field.

[0071] The stub is generated during re-compilation when the field ~~filed~~ watch is activated. The stub may be located in any convenient area (e.g., end of the code space). Then, the offset for the jump instruction is updated to the stub.